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POPULATION GROWTH AND SOCIAL CHANGE IN TAIWAN

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The original title of this paper was "Population Change and Social Change in Taiwan". Owing to the limitation of space, it had to be divided into two parts. With the consent of the author, the first part is being printed under the above title, the part on population change will be printed in next number.—Editor.

I. INTRODUCTORY REMARKS

1. *Significance of the Study of Taiwan's Population.*

(2) As universally admitted, the population problem is one of the most important problems of the present world. Since one fifth of the world population is Chinese, the study of Chinese population is an urgent task. But, sorry to say, we still have no population census, and though there are some population statistics, all are fragmentary and only for a short period of time. Because of these circumstances, "Taiwan is the only place where it is possible to study the processes of change of a Chinese population over a substantial period of time on the basis of excellent data" (Notestein's preface to G. W. Barclay's Colonial Development and Population in Taiwan, p. v. See No. 1 of the main references enumerated on the last page of this paper. Hereafter, the quotation will be abbreviated as follows, 1: p. v.). The study of Taiwan's population will tell us how a part of Chinese population has changed under a specific set of circumstances, and thus enable us to estimate the potential population change in China. This is the reason why the several millions of people on this little island are worthy of our consideration.

2. *Characteristics of the Data of Taiwan's Population.*

(6) In order to promote an effective colonial administration, the Japanese started complete surveys of land and population in the early years of their occupation of Taiwan. During the half century of Japanese occupation (1895–1945), there were population figures of the whole island for 48 years from 1896 to 1943. The statistics from 1905 to 1943, that is from the year when the first census was taken to two years before the Japanese surrender, are especially trustworthy, judged by G. W. Barclay as "complete" and "correct", and Taiwan's statistical system was "a paragon even among those of the technologically advanced nations in the world" (1: p. 145, p. 164). For administrative reference, the population of Taiwan was registered according to different ethnic stocks, and by this we can trace the change of a part of the Chinese population under certain specific circumstance. The subject of this paper is not to treat the population of Taiwan as a whole, but to analyze how a part of Chinese population has changed in

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Taiwan[1].

Before the Japanese occupation there was frequent migration between the China mainland and Taiwan. After the Japanese occupation, the fundamental policy of the colonial government was to cut off the relation between China mainland and Taiwan. Thus the entrance of mainlanders to Taiwan and the departure of Taiwanese to the mainland was strictly controlled. After the restoration of Taiwan to China in 1945, especially since 1949, many people came to Taiwan from the mainland, and the populations factors have changed greatly. During the half century of Japanese occupation the Chinese population in Taiwan was a "closed" population (1: p. 12), its change was almost wholly caused by natural increase, and the influence of migration was insignificant. It seemed that Taiwan was kept as a laboratory for experimentation on Chinese population change, and this is a very valuable condition from a demographic point of view.

Besides dependable data of population statistics, there are statistical data of administration, industry, communication and transportation, hygiene, and education, etc., which will enable us to trace the interrelation of population change and social change. Usually, statistical records begin after a society has attained some degree of development, and the data of the initial stages of modernization are not easy to find. Besides, neglect of birth and death registration is unavoidable in early statistics. Thus even when there are statistictical records, dependable data are hard to get. Taiwan is an exception in these points. Since statistical records were taken by the colonial government under strict police control, dependable statistics from the initial stages of modernization are available, which will enable us to make a study of a complete processes of population change and social change. "It is", as pointed out by Notestein, "if not the only case, then certainly one of the very few cases in the world" (1: p. v.).

Social change in western Europe took place from within, developed by inner necessity, and the change was from the base to the top. Social change in Taiwan was different from this, as pointed out by G. W. Barclay. In Taiwan the Change was started and pushed by the colonial ruler. It was passive in character, and was from the top to the bottom. There are many areas in the world which were occupied as colonies in former times, and their social change shows the same trend as that of Taiwan. The study of social change in Taiwan will help us to understand the colonial type of social change.

By the time of the Japanese occupation (1895), the islands of Taiwan and Hainan had about same size of population, around two and a half million. Fifty years thence, the population of Hainan remained almost the same, but the Taiwanese population had

Note 1: Hitherto the population of Taiwan was treated as a whole in most articles and books. In a paper by the present writer: "Sociological Study of Mortality in Taiwan", published in 1947 -48 (main references, No. 6), a different standpoint was adopted, Chinese population in Taiwan was the subject of the analysis. Two books by G. W. Barclay published in 1954 also adopted the same standpoint.

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161 increased one and a quarter times[2]. What is the reason for the remarkable contrast between these two islands? It is an interesting and significant problem, and the analysis contained in this paper should shed some light on it.

II. POPULATION GROWTH IN TAIWAN

162 *3. Ethnic Composition of Taiwan's Population.*

As soon as the Japanese occupied Taiwan, they started a survey of the population, and as early as 1896 there were population figures of the whole island. Though the figure was not accurate enough, it was not incompatible with figures obtained by the first census in 1905, and we can say the survey was fairly dependable. In October, 1905, the first census was taken, and an accurate figure of total population was obtained for the first time. The total population was 3,123 thousand, 94% of it was Taiwanese (that is Chinese in Taiwan, transfered to Japan by the Manchurian government), 0.26% was the mainlander (that is Chinese who came to Taiwan after the Japanese occupation, and who were treated as overseas Chinese by the colonial government), 3.62% was aborigine, 1.90% was Japanese. The total population of Taiwan from 1896 to 1943 by ethnic stocks is given in table 1. During this period, the proportion of Taiwanese was always more than 90%.

Table 1, A: Taiwan's Total Population and its Ethnic Composition, 1896-1943.

Year	Total	Taiwanese	Mainlander	Aborigine			Japanese	Korean	Other Foreigners	Taiwanese Computing Population	Taiwanese Static Population	Total Computing Population
				Total	Living off Reservations	Living on Reservations						
Column	1	2	3	4	5	6	7	8	9	10	11	12
1896	2,587,688	2,577,194					10,584					
1900	2,846,108	2,707,322	5,160	95,597			37,954		75			
1904	3,079,922	2,915,984	5,917	104,334			53,365		92			
1905	3,123,302	2,942,266	8,223	113,195	36,752	76,443	59,618			2,979,018	3,055,461	3,046,859
1910	3,299,493	3,064,499	14,840	122,106	41,724	80,382	98,048			3,106,223	3,186,606	3,219,111
1920	3,757,838	3,436,071	24,836	130,310	45,762	84,548	166,621			3,481,833	3,566,381	3,673,290
1930	4,679,066	4,259,523	46,691	140,553	54,399	86,154	232,299			4,313,922	4,400,076	4,592,912
1940	6,077,478	5,523,912	46,190	158,321	62,386	95,935	346,663	2,299	93	5,586,298	5,682,233	5,981,543
1942	6,427,932	5,827,857	50,429	162,031	63,991	98,040	384,847	2,692	76	5,891,848	5,989,888	6,329,892
1943	6,585,841		52,020			100,397	397,090	2,775	89	6,033,470	6,133,867	6,485,444

Figures of 1905-1930, column 3 included the figures of other foreigners (col. 9). Before 1930, Korean (col. 8) was included in Japanese (col. 7).

Data: 1896-1904, from 13, No. 8: Table 31; 1905 after, from 14.
Column 1, 3, 7, 8, 9, 11 from 14: Table 45; Col. 2=11-4; Col. 4, from 14: Table 53; Col. 5=4-6; Col. 6=11-10 (The figures of Col. 5 and 6 can be found in "Household Registration of the Aborigines", published by Government-General). Col. 10, 12, from 14: Table 96.

Note 2: BAKER, J. E.: The Balance between Population and Production. Pub. by Chinese Association for the United Nations, 1951.

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The population figures of Taiwan are sometimes confusing. Often we can find different figures of total population or Taiwanese population for the same year. This table will clear up the confusion. From the administratrative point of view, those people living in Taiwan and with Japanese nationality were registered as Taiwanese. This is the figure of col. 11; in fact, it is the total of Taiwanese and aborigines (11= 2+4). The figure of Taiwanese (excluding aborigines) was enumerated in earlier statistical records, but was dropped out after 1905. Strictly speaking, the figure of Taiwanese in col. 2 still included some acculturated aborigines. In the seventh census of 1940 for instance, the number of acculturated aborigines was 58,160. Though the larger part of the aborigines were living in the reservations, some of them were living outside of the reservations. The former were comparatively backward, and their vital statistics were rather incomplete, and thus were omited from vital statistics. According to the inclusion or exclusion of aborigines living in reservations (col. 6), there are two kinds of population totals: when col. 6 is included, it is the total static population (col. 1); when col. 6 is excluded, it is the total computing population (col. 12). As aborigines were included in Taiwanese population in statistical records, there are also two kinds of totals for Taiwanese population: when col. 6 is included, it is the Taiwanese static population (col. 11); when col. 6 is excluded, it is the Taiwanese computing population (col. 10).

Table 1, B: Index of Increase of Taiwan's Total Population and its Main Ethnic Groups, 1896-1943.

	Total		Taiwanese		Main-lander	Aborigines			Japanese	
						Total	Off Reser-vation	On Reser-vation		
1896	100.00		100.00						100.00	
1900	109.98		105.05		100.00	100.00			258.59	
1904	119.01		113.14		114.67	109.23			504.20	
1905	120.69	100.00	114.16	100.00	159.36	118.40	100.00	100.00	563.28	100.00
1910	127.50	105.64	118.91	104.15	287.59	127.72	113.52	105.15	926.37	164.46
1920	145.21	120.31	133.33	116.78	481.31	136.31	124.51	110.60	1,574.27	279.48
1930	180.82	149.81	165.28	144.77	904.86	147.02	148.01	112.70	2,194.81	389.64
1940	234.86	194.58	214.34	187.74	895.15	165.61	169.74	125.49	3,275.34	581.47
1942	248.40	205.80	226.13	198.07	977.30	169.49	174.11	128.25	3,636.12	645.52
1943	254.50	210.86			1,008.13			131.33	3,751.79	666.05

4. Population Growth.

The population growth of the half century under Japanese occupation was tremendous. The total population during the 48 years from 1895 to 1943 increased one and a half times, increased 1.1 times during the 39 years from 1905 to 1943. The increase of Taiwanese population during the 47 years from 1896 to 1942 was 1.26 times, and almost doubled during the 38 years from 1905 to 1942 (cf. Table 1, B). A comparision with

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[6] other parts of the world will help us to understand the implication of the rate of increase. The population of England, Scotland and Wales doubled during the first half of the 19th century, and incresed 80% during the second half of the same century. In Sweden, the increase in the same periods were 48% and 47% respectively (16: pp. 12-13). The population of Japan proper almost doubled during 64 years from 1872 to 1935 (19: p. 27). It took half a century for Britain and more than sixty years for Japan to double its population, but only 38 years for Taiwan (Taiwanese population). However we must keep in mind that, the population growth here compared took place in Britain a century earlier, and the size of population compared is markedly different. Thus it is not a comparision under the same conditions, but still the quick population growth in Taiwan is an undeniable fact.

A comparision of population growth during the same period of time will give us a more concrete idea. Population growth of selected countries during 21 years from 1920 to 1940 was compiled by the National Office of Vital Statistics of the United States. A selection of the representative countries from the data with the figure of Taiwanse is given in Table 2.

Table 2: Percentage Change in Total Population Size: Selected Countries, 1920-1940.

Countries	Percentage of Increase	Countries	Percentage of Increase
France	1.0	Korea	40.9
Sweden	7.9	Netherlands East Indies	42.8
Belgium	12.5	New Zealand (Maoris)	42.9
Spain	21.5	Union of South Africa (Non-Europeans)	54.1
Egypt	26.9	Taiwan (Taiwanese)	60.4
Japan proper	30.6	Malaya	65.6
Ceylon	33.8	Honduras	72.0
Mexico	37.1	Dominican Republic	94.9
Panama	39.6	Palestine (settled population)	134.0

Source, 22: p. 11.

There are four areas with an higher rate of growth than Taiwanese, but the rate of natural increase of these areas in 1940 were all lower than the Taiwanese[3], and their high rate of growth was caused by immigration. So, during 1920-1940, from the standpoint of natural increase, population growth of the Taiwanese seemed to be the hightest in the world.

The annual rate of natural increase of Taiwanese was around 2.5% in 1940. Supposing that this rate of increase will continue, then what will be the future population? It will double about every 28 years. It will increase to 450 million within one

Note 3: The rate of natural increase in 1940: Malaya, 20.6 per 1,000; Honduras, 21.0 per 1,000; Palestine (settled population), 20.2 per 1,000; the figure of Dominican Republic is uncertain (22: p. 21). The rate of Taiwanese was 24.0 per 1,000.

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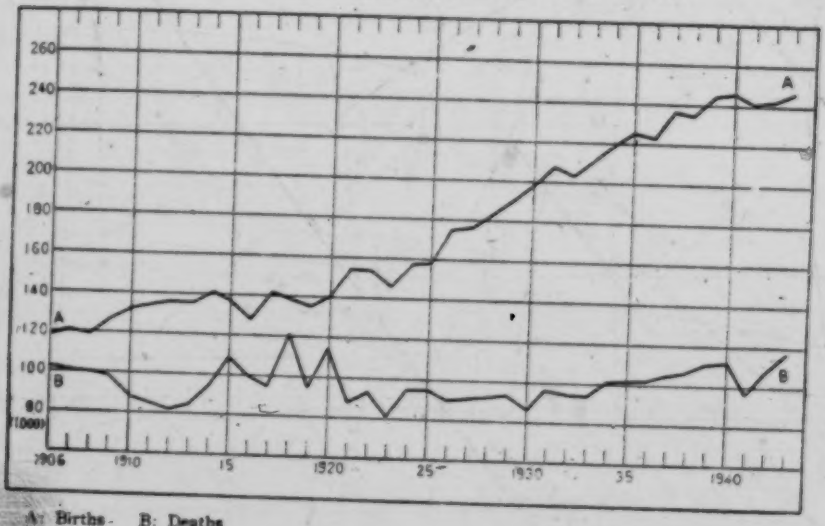
century and a half, and will attain the figure of present world population within two and a half centuries (1: p. 13; 2: p. 45; 4: p. 73-74). As a matter of course these suppositions assume that the present conditions will continue, and that a change of conditions will cause population growth to show another aspect. With regard to the estimation of future population, Sun-Ken Quo has a different point of view based on a different perspective (3).

5. *The Cause of Population Growth.*

Natural increase and immigration are two causes of population growth. Since the colonial government strictly controlled the emigration of Taiwanese to the mainland and the immigration of mainlanders to Taiwan, migration was quite insignificant for the population growth of Taiwanese, and 96% of its total growth was the result of natural increase[4].

Now, how was this natural increase achieved? From Figure 1 we can see that between 1906 and 1943 the annual number of deaths of Taiwanese did not show any remarkable change, it remained around one hundred thousand. In contrast with this,

Fig. 1: Number of Births and Deaths of Taiwanese, 1906-1943



A: Births - B: Deaths

Source. 14: Table 96

Note 4: The total of the annual increase of Taiwanese population between 1906 and 1943 was 3,078,406 (14: Table 49, 3). (The Taiwanese population in 1905 was 3,055,461, the increase between 1906 and 1943 was 3,078,406, and the grand total of these two figures, 6,133,867 was the Taiwanese population in 1943. 14: Table 40, 2. cf. Table 1, A, column 11 of this paper). Total of the annual natural increase of the Taiwanese between 1906 and 1943 was 2,947,998 (14: Table 96) was 95.76% of the total increase. Total annual increase other than natural increase of the same period was 130,408, and occupied only 4.24% of the total increase.

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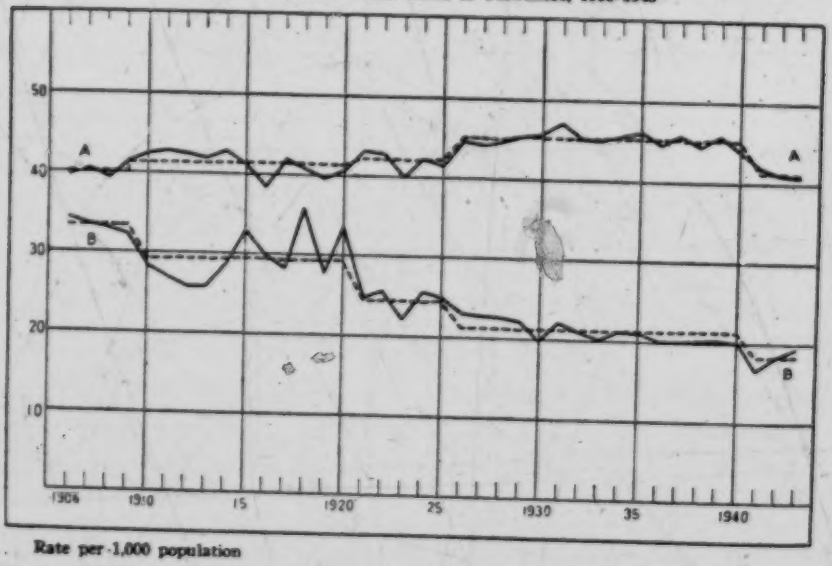
the number of births has increased markedly, it was around 120 thousand by 1906, it had doubled to around 240 thousand by 1943. The number of deaths remained about the same and the number of births was doubled; this was the cause of Taiwanese population growth.

Analyzing the rates of birth and death, the situation will be clearer and easier to grasp. Though the number of births was doubled between 1906 and 1943, the birth rate remained almost the same, around 40 per thousand. Though the birth rate has remained the same, the number of births has increased in accordance with the increase of population. Despite the annual increase of population, the number of deaths has remained almost unchanged. This indicates a decline in the death rate (cf. Fig. 2). The death rate of Taiwanese was 34.4 per 1,000 in 1906, it dropped to 18.4 per 1,000 by 1942, a decline of 16 per 1,000. The birth rate remained almost the same and death rate dropped 16 per 1,000. This is the cause of Taiwanese population growth. The result is clearly shown in the amount of natural increase. The space between line A and line B of Figure 1 represents the amount of natural increase, and the space between line A and line B of Figure 2 represents the rate of natural increase (cf. Table 3). Decline of death rate was the key factor of the Taiwanese population change during the half century under Japanese rule.

Figure 2: Birth and Death Rates of Taiwanese, 1906-1943



Rate per 1,000 population

A: Birth rate B: Death rate (The dotted lines represent the average rate of each period.)

Source, 14: Table 64

6. *Population Change and Social Change.*

From Figure 2 we can observe the trend of the death rate between 1906 and 1943. The graph naturally divides into five periods each with its characteristic type of change

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as indicated in Table 3. The birth rate also shows the same periodical tendency. It is very significant that there is an intimate interrelation between population change and social change in each period, and we even may infer that population change is the index of social change. This will be analyzed in subsequent sections. The average rates of birth, death, and natural increase (Table 3) and main features and changes of each period will be clear from the following table.

Table 3: Five Periods of Taiwanese Population Change.

Period	I	II	III	IV	V
Years	1906-09	1910-20	1921-25	1926-40	1941-43
Number of years	4	11	5	15	3
Average Birth Rate (per 1,000)	40.25	41.40	42.08	45.24	41.10
Average Death Rate (per 1,000)	33.35	29.37	24.61	21.20	18.23
Average Rate of Natural Increase (per 1,000)	6.90	12.03	17.47	24.04	22.83

First Period (before 1909): Wide spread epidemics and malaria, frequent revolts of the people against the Japanese characterize this unstable period. The birth rate was high (more than 40 per 1,000), but the death rate also high, more than 30 per 1,000 on an average, and the fluctuation was remarkable and frequent. The rate of natural increase was about 7 per 1,000.

Second Period (1910-1920): Epidemics were wiped out by the end of this period, the prevention of malaria had started. The uprisings of the Taiwanese were suppressed around 1915, the revolts of the aborigines were largely mitigated by 1920, and comparative social stability was more or less attained. Political, cultural and social movement of the modern type began for the first time after World War I, and took the place of armed uprising. The Japanese colonial policy had changed somewhat. Birth rate increased slightly, death rate declined to an average of around 30 per 1,000, and the rate of natural increase rose to 12 per 1,000.

Third Period (1921-25): Vigorous cultural and social movement marked this era. This was a period preparatory to the following period of expansion. Transportation was improved, mobility of people increased. Agricultural products and processed agricultural products increased, the productivity was raised, and the consumption of daily necessities increased slightly. The attitude of the people began to change, they began to adopt new ways of life more readily. Use of mechanical facilities gradually increased, and the number of doctors of western medicine exceeded the number of physicians who practiced Chinese medicine. The spread of primary education was promoted. The birth rate increased again, the death rate was 4.8 per 1,000 lower than the foregoing period, and the rate of natural increase rose 5.5 per 1,000.

Fourth Period (1926-40): During this period there was a tremendous increase in the output of agricultural products, attaining the peak production during the Japanese rule. The hydroelectric plant of Sun Moon Lake was completed in 1934, and industry

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161 was much promoted by it. Prevention of malaria was successful to a large extent, the
178 activities of preventive hygiene being started by the 1930's. There was reduction in the number of cases of diarrhea, enteritis, and tuberculosis. Infant mortality began to decline. The birth rate rose to a peak, the death rate declined again, and the fluctuations became fewer and of lesser extent. The rate of natural increase attained a peak of 24 per 1,000. Age composion changed, the proportion of infants and children increased markedly.

Fifth Period (1941–1943): The value of industrial products exceeded the value of agricultural products, and the quick tempo of urbanization began. The birth rate began to decline, and death rate continued to drop, to around 18 per 1,000; the rate of natural increase declined slightly. Infant mortality declined further. In comparision with 1906, the average expectation of life of Taiwanese at birth in 1940 was 13 years longer for males and 16.7 years longer for females.

Objectively considered, there were improvements in Taiwan during the half century of Japanese rule; and it is evident at the same time that under the scheme of colonial administration, the improvements were limited in character. The specific character of this social change can be traced in the population data. In order to let her colony carry out its function, in order to make it a good supplier of rice and sugar which Japan urgently needed, various kinds of basic establishments and developments had to be accomplished, such as the wiping out of epidemics, prevention of endemics, basic sanitation, development of transportation, primary education etc. In order to make her colony a good market for manufactured products, the purchasing power and the level of living of the people had to be raised somewhat. But if the "improvement" was pushed too far, it would enable the people to resist and revolt, so it must be kept within certain limits. The Japanese were quite clear on these points, and developed the island within the colonial scheme. The results were successful, even to the extent of Taiwan being called the "ideal colony". Here is the fundamental character of social change in Taiwan. Some data will help us to understand the situation concretely.

161 Though the death rate of Taiwanese had declined, its tempo was slow, and still
165 remained very high in comparision with the death rate of Japanese in Taiwan. In the early years of occupation, the death rate of Japanese in Taiwan was tremendously high, but declined quickly and steadily, and with the passage of time the rate was not only lower than in Japan proper, but even attained the level of the most advanced western countries. To take the death rate of 1925 for instance, it was 24.84 per 1,000 for Taiwanese, 20.27 per 1,000 in Japan proper, but was as low as 11.34 per 1,000 for the Japanese in Taiwan. Though it is somewhat higher than Australia (9.2 per 1,000) and Netherlands (9.8 per 1,000), it is still lower than Sweden (11.7 per 1,000), England and Wales (12.2 per 1,000). The age composition of the Japanese in Taiwan was specific, [162] there were more youths and adults in its population, and no doubt this was one of the causes of its low death rate. But even after the difference of age composition was

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corrected, the standardized death rate of the Japanese in Taiwan was 13.34 per 1,000, still far lower than the rate of 20.27 per 1,000 for their brothers in Japan proper[5]. The rate of infant mortality of the Japanese in Taiwan was also comparable to that of most advanced western countries. From this we can see that Japanese in Taiwan were under tremendously favorable circumstances. Their excessive benefits were enjoyed only at the expense of the land in which they lived.

Social change in Taiwan after the restoration in 1945 will help us to understand the character of colonial type of change. Under Japanese rule, manufacturing industry had attained a fair development, but it produced mostly processed agricultural goods or semi-manufactured goods, and finished consumer's goods were mostly imported from Japan. Fertilizer and textiles were two main import items. If the production of 1941 is taken as base, after the restoration, the production of textiles increased ten times and fertilizer increased five times by 1953 (7: p. 26). This is a sign that the economy of Taiwan has outstripped its colonial and dependent character and has become an autonomous system. In respect to education, the enrollment of Taiwanese school age children in primary school had attained 80% by the later years of Japanese occupation, but the secondary and higher education were very poor. After the restoration, if we take the figure of 1937 as a base and compare it with 1953, the growth of the number of students was as follows. Primary school: more than doubled; vocational and normal school: more than three times; middle school: six and an half times; college and junior college: more than eight times; university: more then twenty one times (7: p. 302). In order to rectify the defects of the colonial era, higher education was especially promoted.

The Japanese are no exception to the rule that each nation struggles for its own benefit. Now that the colonial era is at an end, it is our task to analyze the elements of social change in that era. Some useful references for planning of further social development may be drawn from our analysis.

III. SOCIAL CHANGE IN TAIWAN

Some aspects of social change which relate directly to population change, will be discussed in the following section.

7. *Political Background*

It is self-evident that population growth is deeply influenced by peace and war. The Japanese occupation of Taiwan in 1895 was met with a series of severe revolts. Between 1895 and 1901, the city of Taipei, the capital, was raided twice, the city of Taichung was also raided twice. Other military posts, local governmental offices and posts of military police were raided more than fifty times. A bigger uprising was suppressed in 1902, and after that several years passed in comparative tranquility. An insurrection broke out in 1907, and there were seven revolts between 1907 and 1915. During this period there were frequent uprisings against economic exploitation, as when

Note 5: Tachi, M.: Lecture on Population Problems, Tokio, 1943. p. 201.

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[121] 669 people were forced to sell their land cheaply to sugar corporations. The influence of the revolution lead by Dr. Sun Yat-sen on the mainland was also felt. After 1916, the uprisings were suppressed by a forceful police system. Since 1921 the revolts of the aborigines have been largely mitigated.(5) After the 1920's peace was generally preserved in Taiwan, and the resistance of the people changed gradually from revolt by force to organized political and social movements.

000 Peoples' attitudes are much influenced by peace and war. Disturbances do not give the people the needed security of life and property. They must keep a cautious and watchful attitude at all times. It is impossible to invest the surplus of their production for the extension of their business. They have to exchange the surplus of production for gold and silver, and bury it under the ground for safety. Direct and immediate self-sustainance was their main daily concern, and the idea of future development was unfamiliar to them. This society is approximataly the same as the "militaristic type of society" defined by Herbert Spencer, and no development can be expected from it. In peace time people need not spend their time and energy defending themselves against thieves and bandits. They can concentrate their strength on their work. They can extend their business and gradually plan for the future. Again, we may use Spencer's definition and classify this state as an "industrial type of society". Once 178 established, its development will be accelerated. In Taiwan, after peace and order were established by the colonial government police system, production was extended, 648 and the population gradually increased.

The various kinds of social change in Taiwan were basically influenced by the colonial policy of Japan. Before World War I the policy was typically colonial. After the war, the spirit of democracy permeated the whole world. In Japan, serious social problems broke out. Democratic and Socialistic movements likewise became widespread. Social movement of the modern type among students and young people broke out in China at about the same time. Under the influence of both China and Japan, political, social, and cultural movements started in Taiwan for the first time around 1920. At first the colonial government tried to suppress them by force, but the current was too strong and the government had to change its policy somewhat. From around 1920, the policy of assimilation was adopted, and there were some improvements in administration. Though the improvement was limited in character, it had a fairly significant effect on Taiwan, and its results were reflected in population data. From [161] 1926 on the system of modern Taiwan was generally molded, and after that date population growth was speeded up.

Japan started her invasion of Manchuria in 1931, intruded in northern China in 1937, and then struck Pearl Harbor in 1941. As the war for expansion was extended, Taiwan was considered a strategic base, and the colonial policy had to change again.

Note 6: Yanaihara, T.: Taiwan under Imperialism. 1929, Tokio, pp. 241-242. Shiomi, T.: "Police System and Economy of Taiwan under Japanese Rule". Quarterly of the Bank of Taiwan. Vol. 5, No. 4, 1953, Taipei, pp. 259-261.

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Hitherto the development of chemical production, heavy industry, and consumer goods industries on Taiwan had declined, but now they were earnestly promoted. This gave another impetus to social change.

8. Elimination of Epidemics

After the occupation of Taiwan, two things troubled the Japanese most: the revolts of the Taiwanese and epidemics. One branch of the Japanese expeditionary army landed on the Pescadores on March 21, 1895. By mid-May, fully 1945 people out of 6,190 were afflicted by cholera, and 1,247 died. Another branch of the expeditionary army landed on Taiwan at about the same time and was also stricken with cholera, malaria, dysentry, typhus, pneumonia, and beri-beri. Only one fifth of the total army was free from illness by the end of September (5: Vol. 2, No. 12). During the early years of the Japanese occupation epidemics spread widely, and thus, elimination of epidemics was the first administrative task for the new rulers of Taiwan.

Plague, cholera, and small-pox were three serious epidemics in Taiwan. Plague broke out in Hongkong in 1894, invaded in Taiwan two years later, and had spread to many places during the next twenty-two years. During this time more than thirty thousand people were inflicted, and twenty-four thousand died. It was wiped out in 1917 (5: Vol. 2, No. 12). The activities of extermination and prevention by police power were conspicuous. They included the isolation of patients, destruction and burning of contaminated houses, extermination of rats, quarantine at sea ports etc. Though the means adopted were harsh and cruel, they were effective. Cholera was not as serious as plague in Taiwan. A greater prevalence of cholera occured in 1902, 1912, 1913, and 1920. After 1921 the preventative arrangements were more or less completed and by the cooperation of the people and the public health system, the occurence of cholera could be closely controlled.

During the early years of Japanese occupation small-pox was a serious problem. With the enforcement of vaccination, it began to decline after 1903. Since then, except for a greater prevalence in 1918–1920, small-pox has not been a menance in Taiwan (5: Vol. 2, No. 12).

Plague was wiped out in 1917. Cholera and small-pox were under control by 1920. Since then there has been no serious problem of epidemics in Taiwan. Incidentally, the cattle pest which ravaged Taiwan from 1896 and killed more than forty thousand head of cattle, was also exterminated in 1920.[7]

Whether or not a society is menaced by epidemic is always a significant social fact. We may say that freedom from epidemics is the first step toward modernization. In Taiwan, the course of this change can be traced in the data of population change. Before 1920 the death rate was high, and it also fluctuated frequently, and the extent of fluctuation was great. This is a sign of the uncertainty of life. In fact, living in a society where epidemics constantly spread, one could not estimate in the morning what would be happen before nightfall. Fatalism, such as shown in the saying "man proposes,

Note 7: Animal Resources of Taiwan, published by the Bank of Taiwan, 1962, p. 172, p. 296.

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but God disposes", "Der Mensch denkt, und Gott lenkt", "Der Mensch schaltet, Gott waltet", was fostered under such circumstances. In Taiwan there was a saying: Confucius did not accept an invitation for the next day, since he didn't know whether he would be still alive in the evening or not. Under these circumstances, the attitude of the people is always "looking backward", and planning for the future will be laughed at as utopian. Once epidemics were wiped out, the death rate not only lowered, but its fluctuation became more infrequent and of lesser extent. This is a sign of more stability of life, and thus the traditional fatalism gradually dies out. The attitude of the people changes from "looking backward" to "looking forward", and planning for the future becomes a realistic idea. Ancestor worship and all kinds of cult and ritual are the main concern of people who are always looking backward, but for the peole who are looking forward, the upbringing and education of the younger generation is the most important.

9. Prevention of Endemic Disease

Malaria was the main endemic of Taiwan. Though epidemics are disastrous enough, their prevalence is intermittent, and the extent of their devastation is not necessarily very large. In contrast, malaria creeps in slowly, destroys vitality and attacks human life directly and indirectly. From the time of the Japanese occupation (1895) until 1916, about one tenth of all the deaths in Taiwan were caused by malaria, and during this period it was always the first or second in rank among the leading causes of death. Unaccustomed to the climate of Taiwan, the Japanese in Taiwan had to pay a heavy toll to malaria. In 1899 for instance, one quarter of the total deaths of Japanese in Taiwan were caused by malaria. In 1907, under the supervision of a professor of medicine, prevention of malaria was started by a camphor manufacturing corporation in a village of southern Taiwan, and some results were obtained. Preventative activity by the government-general was started at Peito, a town near Taipei, in 1910. As it was found effective, the regulations for the prevention of malaria were enacted in 1913, and were enforced through the system of police and paochia. The area of prevalence was designated, inhabitants within the area were complelled to have a blood test, and the patients were compelled to take medicine. The use of mosquito nets, drainage, and other sanitary works were enforced. The means adopted were harsh, but the result was good. The malaria death rate began to decline after 1916, considerable improvement has been made since 1925, and as a result the crude death rate was lowered. (cf. Fig. 11).

10. Activities of Preventive Hygiene

The devastation from epidemics and malaria was great, and thus the activities for their prevention were begun first. Some simple facilities for patients of leprosy and mental disease were also provided in earlier years. Other diseases, such as tuberculosis, venereal diseases, trachoma, and parasitic diseases, did not show any serious devastation, and they were not considered as serious problems by the government. The administration in Taiwan was mainly an imitation of that in Japan. What they had

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done in Japan was adopted in Taiwan with some slight time lapse. In 1916 a hygienic survey was made in Japan, and five years later, in 1921, the same project was adopted in Taiwan. Between 1922 and 1925, and also from 1926 to 1928, an extensive hygienic survey was carried out in various parts of the island. After the results were published the planning of sanitary works was mostly based on the data of the survey.

The prevention of trachoma was started around 1926, and was most active in the 1930's. The prevention of tuberculosis began from 1932. The Association for the Prevention of Tuberculosis was organized in 1934, Regulations for the Prevention of Tuberculosis were enacted in 1938, Tuberculosis Prevention Day was initiated in 1939, and a sanatorium was constructed in most prefectures, most of them being completed in 1942–43. These activities were quite effective, and the death rate from tuberculosis declined after 1938 (cf. Fig. 11, line D.) Activities of tuberculosis prevention were started in the U. S. in 1890, and as a result, deaths from tuberculosis declined sharply. It has been pointed out by a social scientist that, though the improvement in living conditions will lower the death rate from tuberculosis, community preventive activity is also very significant (20: p. 631). It is interesting to note that, this was true both in the U. S. and in Taiwan.

The preventive activities against venereal disease, mental disease, parasitic disease, and leprosy were also started by the 1930's. For the administration of these activities, a section of preventive hygiene was added to the Health Department of the government-general in 1935. This may be taken as a sign that more emphasis was put on preventive hygiene.

11. Sanitary Facilities and Medical Personnel

Various kinds of basic sanitary facilities such as drainage, water supply, disposal of garbage and night-soil, supervision of slaughter-houses and markets, inspection of food and businesses such as barber shops, restaurants, and hotels were started rather early. These were started in the cities, particularly in the wards of the city which were largely occupied by the Japanese, and gradually extended to wider areas. The establishment of public hospitals and public doctors was also early in time. Naturally, these were established first and foremost for the benefit of the Japanese in Taiwan. Japanese business men in Taiwan had enjoyed various kinds of privileges, Japanese officers received an allowance 60% greater than that of their brothers at home, and all of them could utilize these public facilities. This was the reason why their death rate was not only lower than the death rate of Japan proper, but even comparable to that of the most advanced countries in the world.

Before the Japanese occupation there were a few hospitals operated by Christian missions. Physicians in these hospitals were the only doctors of western medicine, and other physicians were doctors who practiced Chinese medicine. Some Japanese doctors of western medicine came to Taiwan after the occupation, but their number was very small. In response to the urgent need for medical personnel, training classes for doctors and nurses were set up in Taipei Hospital in 1897. The medical training class

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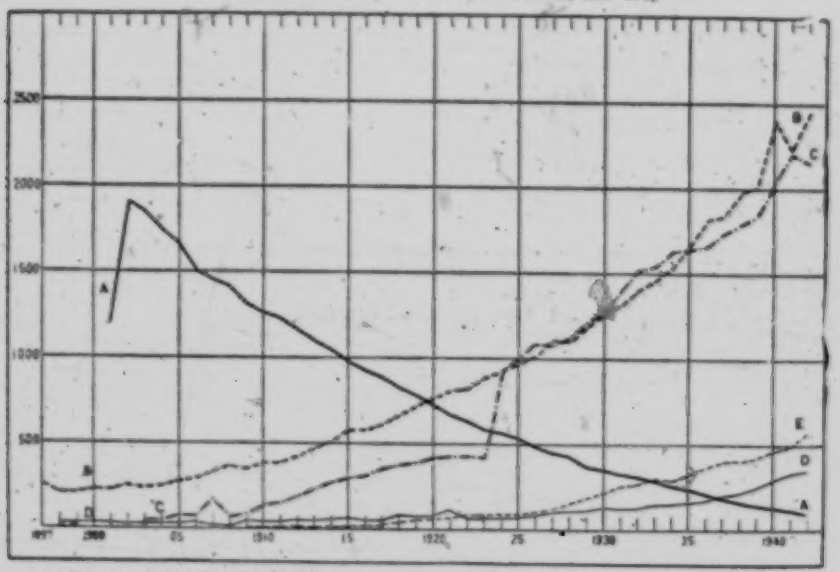
was raised to a medical vocational school, to a medical college, and at last became a school of the Taipei Imperial University. Within the 47 years between 1899 and 1945, a total of 2,813 doctors (1,888 Taiwanese doctors and 925 Japanese doctors) were trained by the school.[8]

The trend of change in the number of medical personnel in Taiwan is given in Figure 3. The decrease in the number of doctors of Chinese medicine and the increase of doctors of western medicine is interesting. It is also significant to note that, the number of the latter exceeded the number of the former by 1930. As to the ratio of inhabitants to doctors (of western medicine), the number of inhabitants per doctor was as follows:

years	number of inhabitants per doctor
1897-1906	10,000-12,000
1907-1911	8,000- 9,000
1912-1913	around 7,000
1914-1916	around 6,000
1917-1919	around 5,000
1920-1926	around 4,000
1927-1935	around 3,000
after 1936	around 2,000

Fig. 3 Number of Medical Personnel, Taiwan, 1897-1942



A: Doctors of Chinese Medicine B: Doctors of Western Medicine C: Midwives
D: Pharmacists E: Dentists
Source, 14: Table 484

Note 8: Li Ting-yeh: Part on Sanitation, Manuscript of the History of Taiwan Province, 1952, Taipei, p. 10.

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In 1942 there were 2,593 inhabitants per doctor, or 4 doctors per 10,000 inhabitants (computed from 14: Table 484).[9]

12. Transportation

A railroad from Keelung to Hsinchu was already constructed by the Machurian government. The railroad mileage increased gradually after the Japanese occupation. The main line from Keelung to Kaohsiung was completed by 1908. New branches, double tracks, and sidings were added rapidly, particularly during the 1920's. By 1930, the railroad system of the Japanese era was generally completed. As to passenger traffic, the number of passengers in 1931 was about 21 times of the number of 1901, and between 1931 and 1941 the number of passenger was almost tripled.[10] The mileage of highways was also rose rapidly after the 1920's (14: Table 449). It is interesting to note that, the number of bicycles, automobiles and trucks began to increase after 1920 (Fig. 4, Fig. 5). When bicycles were first imported, people were surprised by their high speed, and thought they were some magical thing. Now they became familiar with them, and utilized them more and more. This is a sign of the change of attitude among the people.

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Before transportation was developed, different localities within an area could not exchange and trade their products, and the failure of crop in one locality would cause local famine. W. S. Thompson, who stayed some months in Nanking, China, in 1930-31, reported: at that time rice was so cheap in Nanking that many farmers were going bankrupt. At the same time people were starving by the hundred of thousands (some say by the millions) in northwest China. There was no means of transportation to let the two embarassed localities help each other, so local famine was inevitable. This situation has been very common in the past. Such prosperous and well-organized countries as England, France, and Sweden had severe local famines from time to time, even during the first half of the nineteenth century (16: pp. 67-68).

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Development of transportation not only can stabilize the living of the people, but at the same time it can significantly influence the extent of the peoples' economic activity and attitudes. When transportation is poor, surplus products of one locality are useless, and people are obliged to live a self-sufficient and closed economic life. Effective transportation can change surplus products into commodities, extending the sphere of economic and social activities. Thus, a self-sufficient and closed society will change into an open, circulating society living by division of labor and exchange. In a closed society, not only are the things produced different, but customs and manners are also different. In an open and circulating society, everything will gradually become uniform through continual contact and communication. In the vital statistics of Taiwan we can see a reflection of this change. During the early years of Japanese occupation,

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Note 9: As to the situation of medical facilities in 1945, see Li, Ting-yeh: op. cit. 12. As to the comparision of the situation of Taiwan with other parts of the world, cf. 27: Table 120.

Note 10: Tang, C. W.: "Railways in Taiwan". Chinese-American Economic Cooperation, Vol. 1, No. 5, 1952, Taipei, p. 66.

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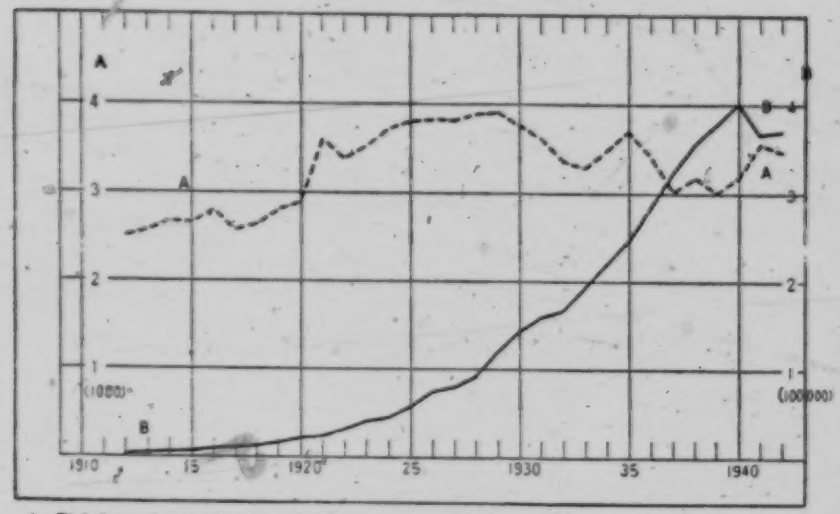
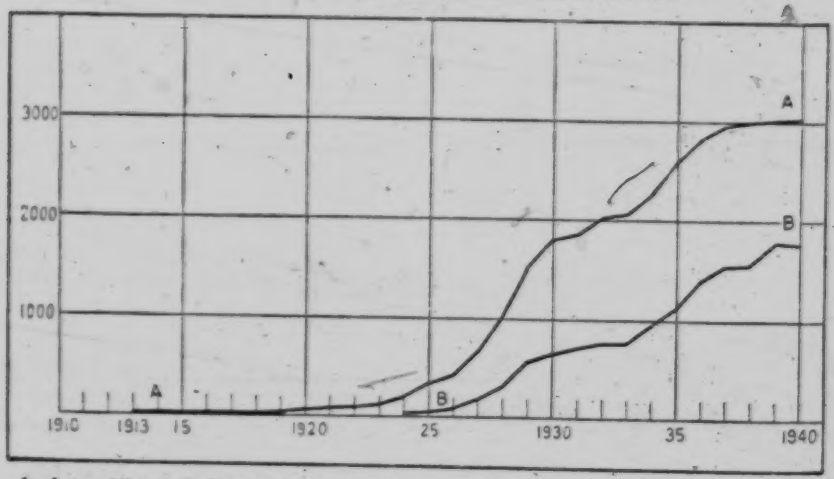
During the early years of Japanese occupation, the difference in the rates of birth and death in different localities was remarkable. As time passed, the development of different localities was gradually equalized, so the

Fig. 4 Number of Rickshaws and Bicycles, Taiwan, 1912-1942



A: Rickshaws (unit: 1,000) B: Bicycles (unit: 100,000)
Source, 14: Table 457

Fig. 5 Number of Automobiles and Trucks, Taiwan, 1913-1943



A: Automobiles B: Trucks
Source, 14: Table 457, 455

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rates of birth and death were more and more equalized. The difference between the highest and the lowest birth rate among different localities was 13.4 per 1,000 in 1906, but had fallen to 8.5 per 1,000 in 1935; the difference between the highest and the lowest death rate among different localities was 32.6 per 1,000 in 1906, but it was only 8.9 per 1,000 in 1935 (see Table 4, cf. 1: p. 169).

Table 4: The Highest and the Lowest Birth Rate, the Highest and the Lowest Death Rate of Different Prefectures of Taiwan in Selected Years (Rate: per 1,000 population)

		1906		1935				1906		1935	
Birth Rate		Whole Province	39.3	Whole Province	45.2	Death Rate		Whole Province	34.0	Whole Province	20.5
	The Highest	Nanto Prefecture	47.7	Tainan Prefecture	48.1		The Higheat	Chiai Prefecture	52.9	Taitung Prefecture	24.4
	The Lowest	Yansuika Prefecture	34.3	Taipei Prefecture	39.6		The Lowest	Hsinchu Prefecture	20.3	Penghu Prefecture	15.5
	Differece		13.4		8.5		Difference		32.6		8.9

Source: 10:1906, 1935.

13. *Agriculture and Industry*

To get primary agricultural products and processed agricultural products, especially rice and sugar, which Japan needed urgently, was one of the main policies of Japan in Taiwan. The colonial government had spent much of time and money for the promotion of the production of rice and sugar. They made various kinds of surveys, researches, and experiments, used the system of police and pao-chia for enforcement, and as a result, the outputs of rice and sugar had increased tremendously.

Among the various types of production in Taiwan, agriculture and manufacturing were the two main types, and the proportion occupied by forestry, fishery, and mining was rather small. In 1912, the value of the total output of all types of production amounted to 146,374 thousand yen. Among these, the proportion of agriculture was 63%, manufacturing was 32%, and the total of three other types (forestry, fishery, and mining) was only 5%. By 1942, manufacturing had developed fairly well, its production value had exceeded that of agriculture. The value of the total output of all types of production in 1942 was 1,515,627 thousand yen. Agriculture's share of this was 42%, manufacturing was 46%, and the total of three other types was 12%. Agriculture and manufacturing, the two main types of production, were again represented by rice and sugar respectively. The proportion of the value of rice to the total value of agricultural products was 59% in 1912, and 39% in 1942. The proportion of the value of sugar to the total value of manufactured products was 79% in 1912 and 42% in 1942. Considering these facts, it seems not unproper to take rice and sugar as representative of Taiwan production.

From figure 6 we can see, that in comparision with the increase of acreage of cultivation (line A), the increase in the output of rice (line B) was tremendously high.

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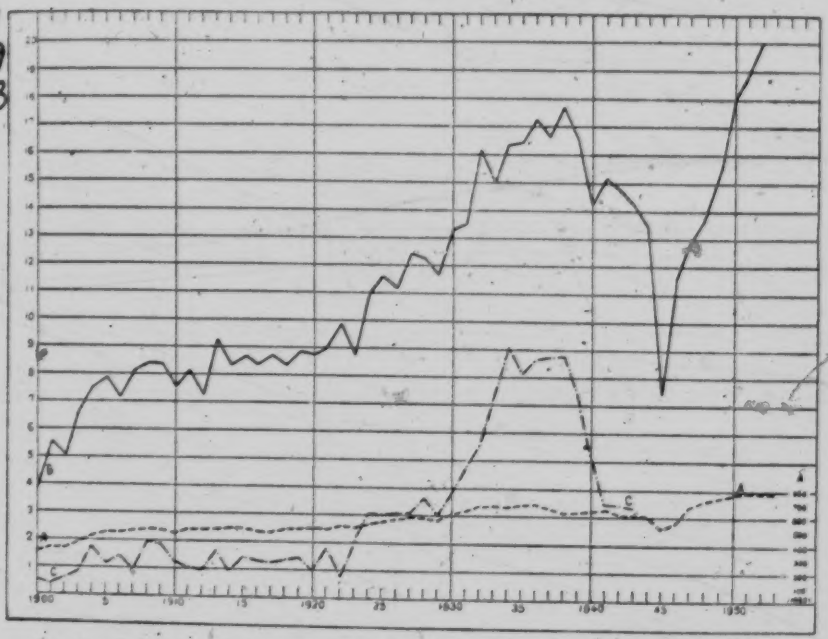
Productivity was raised by improvements in various aspects. The rapid increase in the output of rice from the 1920's was the result of the adoption of a new strain (Ponlai rice). By the 1930's, the production of rice in Taiwan was so large as to be twice its local demand, and the surplus rice was exported to Japan. Though the price of Taiwan rice was controlled by the Japanese government and the profit of trade in rice was mainly monopolized by big Japanese traders, the increase of production did have some benefits for Taiwanese, and no doubt, this contributed to the lowering of the death rate after 1920.

Fig. 6 Acreage of Cultivation, Amount of Production and Exportation of Rice, Taiwan, 1900-1953



A: Acreage of Cultivation (unit: 1,000 ha) B: Amount of Production (unit: 1,000,000 hectoliter)
C: Amount of Net Export (unit: 1,000,000 hectoliter)
Source, 1900-1948, from the Rice of Taiwan, 1949, Taipei.
1949-1962, from Taiwan Agricultural Yearbook, 1952, Taipei.

The condition of sugar was a little different from that of rice. The profit in sugar manufacturing was exclusively monopolized by the Japanese enterprisers. But it is undeniable that, in respect to the improvement of agricultural techniques and the raising of productivity, substantial effects were obtained.

As pointed out by W.S. Thompson, "underfeeding weakens the individual and renders him less resistant to disease, whether it be of the degenerative or of the germ

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type. When we find death rates regularly mounting to 30 or 40 per 1,000 we may be reasonably certain that undernourishment is one of the factors at work" (15: p. 50). Another author has remarked: "a survey based upon prewar conditions showed that half of the population of the world was then subsisting on an average daily consumption of less than 2,250 calories per capita, and that among these peoples the crude death rate averaged 30 or more per 1,000 population around 1930. On the other hand, only one fifth of the world's population was favored with an average daily per capita intake of 2,875 or more calories, and the countries containing these peoples had an average crude death rate as low as 12 per 1,000 around 1930" (28: pp. 62–64). From this data it is safe to conclude with W. S. Thompson that, "increased productivity is and always has been the absolute prerequisite for any substantial lowering of the death rate" (16: p. 70). In the period of 41 years between 1902 and 1942 the total population of Taiwan increased about 1.2 times, but the production of rice increased 1.9 times and sugar increased 19 times (Table 5). The increase of production far out ran the increase of population. No doubt, this was the basis for the decline of the death rate and the growth of population.

Table 5: The Increase in Production of Rice and Sugar and the Increase of Population in Taiwan in Selected Years, Actual Number and Index

	Output		Population	Index					
	Rice (1,000 Hectoliter)	Sugar (Metric Ton)	(1,000)	Rice		Sugar		Population	
1902	5,090	54,522	2,907	100.0		100.0		100.0	
1906	7,159	76,433	3,081	140.7	100.0	140.2	100.0	106.0	100.0
1912	7,300	175,587	3,354	143.4	102.0	322.1	229.7	115.4	108.9
1922	9,822	352,655	3,822	193.0	137.2	646.8	461.4	131.5	124.1
1932	16,144	989,050	4,843	317.2	225.5	1,814.0	1,294.0	166.6	157.2
1942	14,789	1,101,752	6,330	290.6	206.6	2,020.8	1,441.5	217.8	205.5

Source: Rice, 14: Table 303; Sugar, Taiwan Sugar Statistics; Population, 1902, 13; 1906–1942, 14: Table 64.

Besides the increase in productivity, all kinds of public works and establishments have a significant effect on the stability of life and the lowering of the death rate. Though we cannot stop drought, flood, or other calamities, we can mitigate the damage of these calamities by forestation and the regulation of water courses. Even the ill effects already suffered can be much lowered by public assistance and other systems of social work. The influenza of 1918–19 took over half a million lives in the U. S. and 15 million lives in India. The population of the U. S. at that time was around 100 million, so the death rate from influenza was about 5 per 1,000. The population of India at the same time was around 300 million, so the death rate of influenza was about 50 per 1,000 (17: p. 226; 15: p. 219). Why was the number of victims of influenza 10 times higher in India than in the U. S.? No doubt, the differences in the degree of

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productivity and the progress in public works and social establishments were the cause of this contrast.

14. Education

Modern society is a society based upon science and technology, and it is a prerequisite that most of its members have a scientific attitude. If many of its member do not realize that epidemics are spread by germs, if the large part of the people believe disease to be the malicious work of devils, then it is impossible to wipe out epidemics. For farmers to use modern agricultural tools and machines, for workers to work in a modern factory, for soldiers to fight with modern weapons, the scientific attitude is indispensable. In order to give its members the scientific attitude, modern society, which respects individual freedom in principle, does not allow freedom in regard to education. Thus the system of compulsory education has been universally adopted. It is only natural that the decline of death rate and the growth of population should have an intimate relation with the spread of education.

During the Manchurian period, except for small number of public schools operated by the government, education was carried out mostly by private schools, operated by family or kinship groups. Primary education of a modern type was started by the colonial government, and the trend of growth of the number of schools and students is given in Table 6. By the change of colonial policy, the increase was speeded up after 1920, particularly since the 1930's. Enrollment of girls was very poor in the earlier years, but had improved with the passage of time. In 1943, enrollment of school age children in primary schools was 81% for boys, and 61% for girls (14: Table 481). However, the improvement was mostly limited to primary education, and with regard to secondary and higher education, it was very poor. The improvement in education after the restoration in 1945 was essentially an improvement in secondary and higher education (cf. §6).

Table 6: Number of Schools and Students of Private Schools and Public Schools for Taiwanese in Selected Years

	Private Schools				Public Schools for Taiwanese			
	Number of Schools	No. of Students			Number of Schools	No. of Students		
		Total	Boys	Girls		Total	Boys	Girls
1899	1,721	25,215	25,089	126	96	9,817	9,435	382
1909	655	17,101	16,701	400	231	40,650	37,023	3,627
1919	301	10,936	10,347	587	438	129,580	107,253	22,327
1929	160	5,805	5,043	762	754	232,829	179,024	53,805
1939	17	932	632	300	810	546,209	361,068	185,141
1944					944	872,507	500,333	372,174

Originally there were primary schools for Japanese and primary schools for Taiwanese. In later years some Taiwanese students were permitted to enter primary schools for Japanese. The above table do not include this part of Taiwanese students.

Source: 14:Table 477.

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15. *Change in the Way of Life*

In response to the various changes which took place during the Japanese era, the way of life of the Taiwanese had gradually changed. There is much data on this point, but we can only describe some of it in this limited space. The increase in the mobility of the people should be pointed out first. How many times each person has

178
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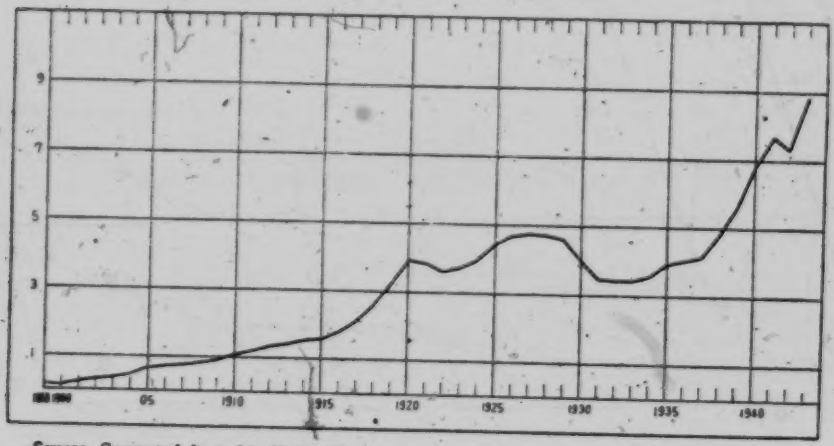
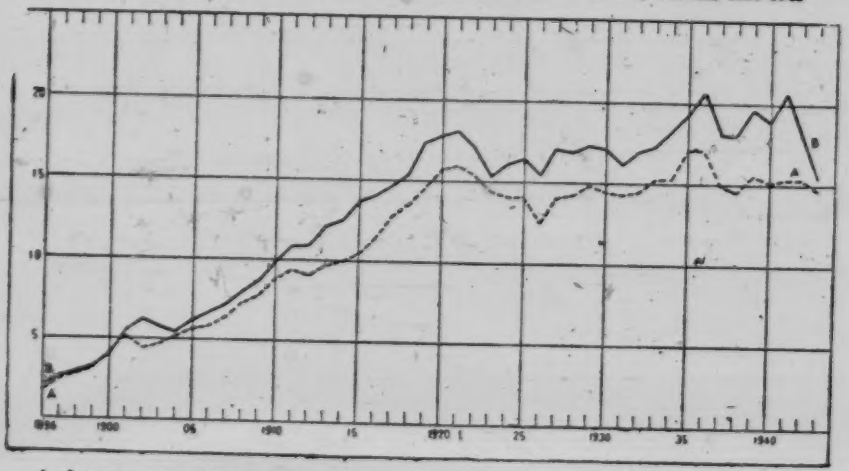
Fig. 7: Number of Times Traveled on Government Owned Railroads Per Capita Per Annum, Taiwan, 1899-1943



Source, Computed from 14: Table 433

Fig. 8: Number of Letters Received and Sent Per Capita Per Annum, Taiwan, 1896-1943



A: Letters sent B: Letters received
Source, Computed from 14: Table 412

48: Chen E-4 (no date) 1955 AD1 Formosa AD1

178 484 traveled by train annually, and how many letters he has received and sent annually may be taken as an index of the mobility. The increase in the frequency of travel and the increase in the number letters received and sent are signs of the wider sphere of activity and higher mobility. The increase since 1920 was particularly remarkable (Fig. 7, Fig. 8).

Figure 7 was the number of times of travel per capita per annum on government owned railroads, and does not include travel on privately owned railroads and bus lines. When the latter is included, the figure rises as indicated in Table 7. During the later ars of Japanese rule the mobility had increased markedly. In 1938, the number of times traveled per capita per anum was 17.19, but it had risen to 23.64 by 1942.

Table 7: Number of Passengers on Train and Bus Lines in Taiwan in Selected Years

	1938	1942
1. Government-owned Railroads	27,179,194	46,342,569
2. Privately-owned Railroads	2,002,456	1,962,017
3. Government-owned Bus Lines	8,207,474	9,413,577
4. Privately-owned Bus Lines	53,644,809	81,536,398
Total	91,033,933	139,254,561
5. Total Population	5,267,005	5,891,848
Average times travelled Per Capita Per Annum	17.19	23.64

Source: 14, 1: Table 433; 2: Table 446; 3: Table 458; 4: Table 459; 5: Table 64.

262 The consumption of food had also increased. Here we will take sugar and pork as an example (Table 8).

Table 8: Per Capita Per Annum Consumption of Sugar, Taiwan[11]

Year	Per Capita Per Annum Consumption
1903-1909	2.79 kilograms
1910-1920	5.26 kilograms
1921-1925	6.13 kilograms
1926-1938	8.87 kilograms
1939-1943	14.41 kilograms

In later years of World War II the transportation between Taiwan and Japan was hampered by the allied forces, and no doubt, the jump in the amount of consumption in the last period (1939-1943) of the table 8 includes some sugar which was actually stocked in warehouses in Taiwan. For comparision, the per capita per annumn consumption of sugar in other parts of the world in 1939 was as follows. Netherlands was the highest consumer: 81 kilograms. Denmark and Australia came to next, more than 50 kilograms. Britain, U.S.A., and Canada were nearly 50 kilograms, Italy and Portugal were about 9.5 kilograms. India was 6.7 kilograms, Java: 4.6 kilogram, China mainland: 1.8 kilograms. The average of 1939-43 in Tawian was 14.4 kilograms[12].

Note 11: Taiwan Sugar Yearbook, 1947, Taipei, Table 55.
Note 12: op. cit., Table 106. cf. 27: Table 144, Table 145.

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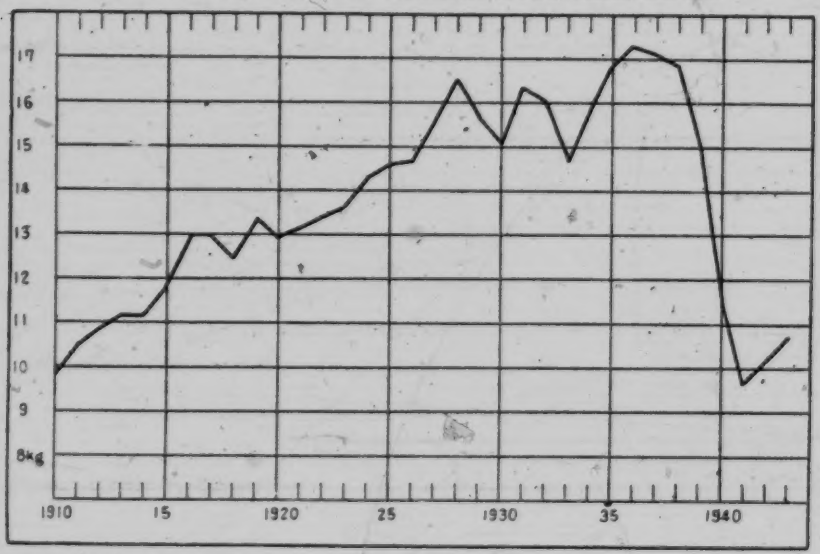
The increase in the consumption of pork is given in Figure 9. Beef and mutton are not included in this figure. Increase in the amount of meat consumption is a sign of the improvement of the standard of living. The per capita per annum consumption of meat in France was 20 kilograms in 1840, it increased to 35 kilograms by 1892, and to 40 kilograms by 1939[13]. The consumption of pork in Taiwan was 7.3 kilograms in 1910, it reached a peak of 17.3 kilograms in 1936, and after that decreased as the importation of beans and bean cakes as animal feed became increasingly difficult with the development of the war. For comparision, the per capita per annum consumption of meat in other parts of the world in 1939 was as follows. New Zealand was the highest: 110. kilograms; Australia: 95 kilograms; U. S. A., Canada, and Britain: more than 60 kilograms; Switzerland and France: more than 40 kilograms; Italy: 20 kilograms[14]. The consumption of pork alone in Taiwan was 15 kilograms in 1939.

Fig. 9: Per Capita Per Annum Consumption of Pork, Taiwan, 1910-1943



Unit: Kilogram
Source: Animal Resources of Taiwan, pp. 63-64

16. *Change in the Attitude of the People*

People living under many kinds of changes gradually change their attitudes, or the ways of feeling, thinking and behaving. During the early years of Japanese rule, the large part of the Taiwanese were conservative farmers, who persisted in their traditional way of life. They had to face the merciless coercion of Japanese police on

Note 13: Peyret, H.: La Lutte pour less Dernées Vitaless, 1946, Paris, qu. from Japanese tr. pp. 76-77.
Note 14: op. cit., p. 27. cf. 27: Table 144.

48: Chen E-4 (no date) 1955 ADI Formosa ADI

matters of sanitation, and at times on matters of agriculture. With the passage of time, experience lead them to compare their traditional way of life with that imposed by the colonial government. Some of these ways were found to be not too bad, some even adoptable. This kind of change in attitude through hard experience was fairly significant. By this, people realized for the first time that there were another ways of life besides their traditional one, and that some elements were worthy of adoption. Once the people began to adopt the new way of life, change began to speed up. From the following instances we can see that change in the attitude of people became conspicuous after the 1920's. We have discussed the influence of war and peace, the prevalence of epidemics, and the development of transportation on the attitude of the people (§ 7, 8, 12). Here the change of attitude concerning medical treatment and agriculture will be discussed.

Since treatment of illness touches the innermost part of life, it is only natural that conservative people do not dare to allow an unfamiliar doctor with strange ways of treatment to approach them. For Taiwanese, who had been accustomed to the traditional Chinese medicine and folk medicine, doctors of western medicine, particularly with their injections and operations, were dreaded. During the early years of the Japanese rule there was a prevalence of cholera. Colonial officers compelled the people to take the preventive injection. Great consternation arose among the people, and many of them, particularly young girls, escaped and hid, in order not to have the dreaded injection. In the old city of Tainan a young girl of a wealthy family was escaping in a palanquin, but unfortunately she was caught by a Japanese police on the way, and forced to take the injection. Perhaps because the shock was too great, she died in a short time. Another young girl who took the injection killed herself after she went home, because it was a dreadful shame for a young girl of high standing to expose a part of her body to the public gaze. When a person died, his family had to have a medical certificate in order to get permission for burial. In 1906 90% of the medical certificates were issued by doctors of Chinese medicine, and certificates issued by doctors of western medicine constituted only 10% of the total. The proportion of the latter increased gradually, attained to 45% by 1917 (11:1917, p. 29). By 1920, the number of doctors of western medicine already exceeded those of Chinese medicine, and by 1935, 90% of medical certificates for the dead were issued by doctors of western medicine. Thirty years after 1906, doctors of Chinese medicine and doctors of western medicine had changed positions completely. By 1935, people did not object to injections and operations any more. On the contrary, they even believed blindly in injections, and asked for an injection when they saw a doctor. This was a remarkable change in attitude.

Farmers are tenaciously conservative in their work. In Taiwan, farmers originally used only compost and night-soil, and did not use any commercial fertilizer. When a sugar corporation started to promote the cultivation of sugar cane, they bought commercial fertilizer from Japan, and distributed it free of charge to farmers. Once a

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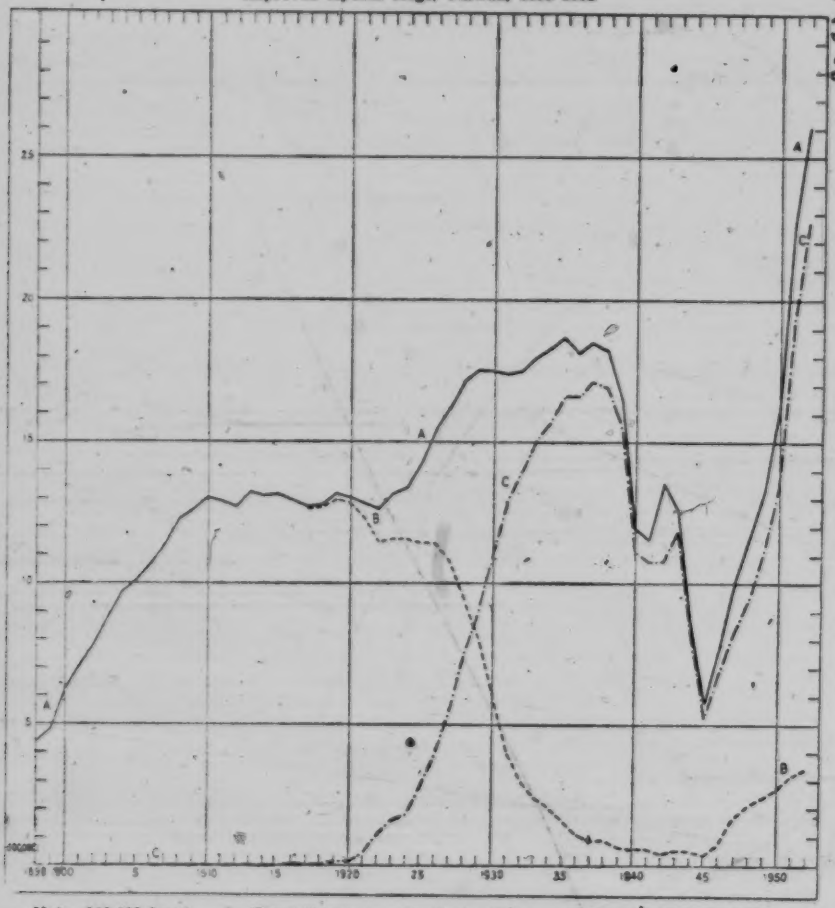
farmer received some bean cake for fertilizer. However he was afraid that this new and strange material would hurt his crop, so he threw it away in a grove of bamboo. Later he found that the bamboo around the bean cake had shot up tremendously, and he realized for the first time that commercial fertilizer was useful, and began to use it on his crops. It is not an easy task for the conservative farmer to depart even a little from his traditional way of life, and experiment with new methods. But when once the experiment is begun, new experiences will lead him farther. The use of commercial

Fig. 10: Total Number of Hogs and the Number of Native Hogs and Improved Hybrid Hogs, Taiwan, 1898-1952



Unit: 100,000 head A: Total Number B: Native Hogs C: Improved Hybrid Hogs
Source, 1898-1950, from Animal Resources of Taiwan, pp. 58-59
1951-1952, from Taiwan Agricultural Yearbook, 1952

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fertilizer spread quickly, and with textiles, became one of the main items of import from Japan.

For the improvement of hog raising, the colonial government had imported Berkshire hogs from Japan in 1896, and Yorkshire hogs from England in 1900. After a series of experiments, it was found that the first generation of hybrids between the native hog and Berkshire hog was most suitable to Taiwan, and the promotion of the hybrid was started in 1907. As in other agricultural practice, the traditional way of hog raising was a complicated procedure. Many religious and magical elements were involved in it, and it was not easy for the conservative farmer to adopt the profitable new hybrid. It took more than ten years of government promotion before people became willing to adopt the new hybrid. After 1920 more and more people adopted it, and the number of native hogs declined sharply (Fig. 10). This is the best instance of change in the attitude of the people. A new strain of rice (Ponlai rice) has been extensively cultivated since 1924, and the output of rice has sharply increased.

The 1920's is the turning point in the social history of Taiwan. Epidemics were wiped out, prevention of malaria had improved, the doctors of western medicine exceeded the doctors of the Chinese medicine, and even the cattle pest was wiped out. Political and social movements began for the first time. Primary education spread wider, the conservative farmer began to adopt new strains and new technics, and increase production. Mobility of the people had increased, more bicycles, automobiles, and trucks were used, and the level of living was raised somewhat. It was amid this social milieu that Taiwan's death rate steadily declined while its already teeming population with equal steadiness rose to new heights.

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